Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Mr. Vaux announced the decease of Mr. Thos. Biddle, late a member of this Academy.

On motion of Mr. Cassin, the thanks of the Academy were presented to Mr. J. H. Slack for his valuable donations to the Ethnological collection received this evening.

### *June* 23*d*, 1857.

Mr. Ord, President, in the Chair.

Mr. Vaux read a letter from Mr. John Biddle, dated June 11th, 1857, accompanying the crania of Thugs presented this evening.

My late brother-in-law Wm. A. Foster, in 1836 (at which time we were both residing in Calcutta) applied to Dr. Martin, E. I. Co.'s Surgeon, and the leading physician of that city, to procure for him the skulls of some Thugs. Dr. M. did not succeed in obtaining them until the latter part of 1837, at which time Mr. F. had left India for the United States. As I was still there, Dr. M. sent them to me for Mr. F., and I shipped the lot, consisting of six, to Philadelphia. On their arrival, Mr. F. was absent from the United States, and had transferred them to me.

Dr. Martin, in his note accompanying them, stated that they were the heads of *notorious* Thugs, who had recently been hung by direction of the Court for the suppression of Thuggee established by the E. I. Co.; and I entertain no doubt of the correctness of his statement.

As to the province of Hindoostan, to which the birth place of these six Thugs should be referred, Dr. M. said nothing, and probably knew nothing. Neither did he inform me in which district they were tried and executed; but at the period at which he procured them, Thuggee was practised much more extensively in the region about the head waters of the Ganges than in the province of Bengal; and I presume that they were obtained from the former region.

Two of the six skulls were sent by me to our late friend Dr. Samuel G. Morton, in W. A. Foster's name. I suppose them to be the same which appear in the Catalogue of Crania belonging to the Academy. Two others I presented to George Combe, of Scotland, when on a visit to our city, many years ago; and the remaining two you now have.

Mr. Lea presented for publication a paper entitled "Descriptions of twenty-seven New Species of Uniones from Georgia," which was referred to a committee.

### *June* 30*th*, 1857.

Vice-President Bridges in the Chair.

The Committees to whom were referred the following papers, reported in favor of their publication.

## Notes on the Geology of the Mauvaises Terres of White River, Nebraska.

BY F. V. HAYDEN, M. D.

This interesting lacustrine deposit has but recently been made known to the scientific world,—wonderful not alone for its unique scenery, but also for the abundance and importance of its organic remains; and although it has been as yet but partially explored, the results that have been obtained have proved of the highest interest. The profusion of Mammalian and Chelonian remains which have been entombed in its strata, of species and, in most cases, genera, though closely allied, yet differing from all known living forms, its purely fresh-water origin and remarkable physical features, must render it, when fully explored and studied, classic ground to the Geologist and Palæontologist. I now propose to give a brief account of the history and progress of its discovery, note the different expeditions which have visited it, and present, in as short a compass as possible, what is now known respecting its geology. The history of its exploration up to 1853 I quote from Prof. Leidy's great work, "The Ancient Fauna of Nebraska."

"This extensive cemetery of eocene vertebrata in the Mauvaises Terres, or Bad Lands, was first brought to our notice in a communication entitled, '*Description of a fossil Maxillary Bone of a Palæotherium from near White River, published by Hiram A. Prout, M. D., of St. Louis*, in the American Journal of Science and Arts for 1847, page 248.'

"Nearly at the same time Mr. S. D. Phillips, when on a visit to Chambersburgh, observed in the possession of Dr. S. D. Culbertson, several remarkable mammalian fossils, which had been sent as curiosities from the Bad Lands by his nephew, Mr. Alexander Culbertson, of the American Fur Company. These specimens, at the suggestion of the late distinguished Dr. S. G. Morton, were obtained through Dr. John H. B. McClelland, a friend of Dr. Culbertson, and were obligingly placed in my hands for examination. A description of them was published in the Proceedings of the Academy of Natural Sciences of Philadelphia for 1847 and 1848, and they were afterward presented by Alexander Culbertson to the Academy.

"The attention of Dr. D. D. Owen having been directed to the interesting region whence the fossils were obtained, he requested Dr. John Evans, an assistant in the Geological Survey in which he was engaged, to pay it a visit. This gentleman brought home a magnificent collection of fossils, which form the basis of one of the chapters in Dr. Owen's Report.*

"Through the instrumentality of Prof. S. F. Baird, who from the first fully appreciated the importance of a complete examination of the Mauvaises Terres, and their animal remains, Mr. Thaddeus A. Culbertson, under the auspices of the Smithsonian Institution, visited the locality and brought home a valuable additional collection of Mammalian and Chelonian fossils."†

In the spring of 1853, Dr. John Evans, U. S. Geologist, made an incidental tour to the Bad Lands, while on his way to his field of labors in Oregon, and obtained a very large and valuable collection; and besides re-collecting most of the forms already discovered, added five new species to the Fauna.

At the same time another expedition was fitted out and sent to the Bad Lands through the liberality of Prof. James Hall, the eminent Geologist and Palæontologist of New York; and Mr. F. B. Meek and the writer were employed by him to perform the trip. A large and valuable collection and much information were obtained, adding greatly to our knowledge of the country. Three new species of mammals were also added to the Nebraska Fauna.

In February, 1855, while spending the winter at Fort Pierre, the writer made a tour to the Bad Lands, under the patronage of Col. A. J. Vaughan, U. S. Agent for the Upper Missouri Indians. A severe storm of snow, however, rendered it impossible for him to go beyond Sage Creek. A few mammalian remains and a fine collection of the fresh-water fossils from Pinao's Spring were the only results. In May of the same year the writer made a second trip by a route never before taken by travellers. Leaving Fort Pierre, he took a south-easterly course, struck White River about thirty miles above its mouth, crossed the stream and ascended to the dividing ridge which overlooks the valley of Running Water, on the south side of White River and the main body of the Bad Lands. An opportunity was thus given to examine the outliers and upper beds of the Bad Lands, which resulted in the discovery of several new forms of Fossil Mammalia among which were four new species belonging to the family Rodentia,* a group not before discovered in this basin. A fine opportunity was thus given to trace the connection of distant outliers on both sides of the Missouri, with the main body of the Bad Lands at the head of White and Shyenne rivers.

---

* See Dr. Leidy's Memoir, p. 533, of the Report of a Geological Survey of Wisconsin &c.

† Journal of an Expedition to the Mauvaises Terres and the Upper Missouri in 1850. Fifth Annual Report of the Smithsonian Institution, page 84.

I will now present a vertical section showing the order of superposition of the different beds at the various localities examined, premising, however, that the thickness of the strata are all estimated. The section, therefore, cannot be as perfect as could be desired, but may throw some light on the geology of that interesting region.

*Vertical Section, showing the order of superposition of the different Beds of the Bad Lands of White River, so far as determined.*

| | | Subdivisions. | Localities. | Estimated thickness. |
|---|---|---|---|---|
| MIOCENE TERTIARY. | Bed H. | Gray and greenish-gray sandstone, varying from a very fine compact structure to a conglomerate. | Bijou Hills, Medicine Hills, Eagle Nest Hills. | 20 ft. |
| | Bed G. | Yellowish gray grit, passing down into a yellow and light yellow argillo-calcareous marl, with numerous calcareous concretions and much crystalline material, like Sulphate of Baryta. Fossils: Hipparion, Merychippus, Steneofiber, &c. | Bijou Hills, Medicine Hills, Eagle Nest Hills, and numerous localities on south side of White River, also at the head of Teton River. | 50 ft. |
| | Bed F. | Grayish and light gray rather coarse-grained sandstone, with much Sulphate of Alumina? disseminated through it. | Along White River valley, on the south side. | 20 ft. |
| | Bed E. | Yellowish and flesh-colored indurated argillo-calcareous bed, with tough argillo-calcareous concretions, containing Testudo, Hipparion, Steneofiber, Oreodon, Rhinoceros, &c. | Seen along the White River valley, on the south side. | 30 ft. |
| | Bed D. | Yellow and light yellow calcareous marl, with argillo-calcareous concretions and slabs of silicious limestone, containing well preserved fresh-water shells. | On the south side of White River. Seen in its greatest thickness at Pinao's Spring. | 40 ft. |
| | Bed C. | Light gray silicious grit, sometimes forming a compact fine grained sandstone. | Seen on both sides of White River. Also at Ash Grove Spring. | 20 ft. |
| | Bed B. | A reddish flesh-colored argillo-calcareous indurated material, passing down into a gray clay, containing concretionary sandstone, sometimes an aggregate of angular grains of quartz, underlaid by a flesh-colored argillo-calcareous indurated stratum, containing a profusion of Mammalian and Chelonian remains. Turtle and Oreodon Bed. | Revealed on both sides of White River and throughout the main body of the Bad Lands. | 80 feet. |
| | Bed A. | Light gray calcareous grit, passing down into a stratum composed of an aggregate of rather coarse granular quartz; underlaid by an ash-colored argillaceous indurated bed with a greenish tinge. Titanotherium Bed. | Best developed at the entrance of the Basin from Bear Creek. Seen also in the channel of White River. | 50 ft. |
| CRETACEOUS SYSTEM. | Formation No. 5. | Gray and yellowish arenaceous clays and sandstones, sometimes weathering to a pink color; contains *Belemnitella bulbosa*, *Nautilus Dekayi*, *Ammonites placenta*, *A. lobatus*, *Scaphites Conradi*, *Baculites grandis*, and great numbers of other Marine Mollusca. | Immediately under the Tertiary bed A at Bear Creek. Seen also at Sage Creek, head of Teton River, Moreau Trading Post, Fox Ridge, Butte aux Gres on Missouri River, mouth of Cannon Ball River. | 100 to 150 feet. |

---

*See a paper by Prof. Leidy, in the Proceedings of the Philad. Academy, for April, 1857.

In making some general remarks in regard to the geology of the Bad Lands, I propose to take Fort Pierre as the starting point, pass up the valley of the Teton River to its source, and over the Plateau, skirting the northern side of the Bad Lands, enter the basin at Bear Creek, cross White River near Ash Grove Spring, and descend the valley of White River on the south side of the Bad Lands, below its confluence with the Missouri to Bijou Hills.

Leaving Fort Pierre, on our route to the Bad Lands, we take a course a little south of west along the valley drained by the Teton River and its tributaries. This region is underlaid by Formation* No. 4 of the Cretaceous system. The surface is quite undulating, presenting the usual indications of sterility, with very little to break the monotony of the scenery until reaching Grindstone Hills, about eighty miles from our starting point, where a new feature presents itself. These hills strike the eye of the traveller on account of their peculiar form, heighth and the immense ledges of rock that cap their summits. These rocks present an exceedingly variable structure. Some are formed of an aggregation of quartz fragments cemented with carbonate of lime; others form a coarse-grained sandstone, or a conglomerate of water-worn pebbles mixed with angular grains of quartz. This bed is undoubtedly an outlier of the Tertiary formations of the Bad Lands. Underneath is the yellow arenaceous bed No. 5 of the Cretaceous system, and underlying this is No. 4, with its peculiar concretions and a few fossils. Scattered through the valley of the little stream that flows at the base of the hills are slabs of Tertiary limestone containing fresh-water shells of the genera *Limnea*, *Planorbis*, &c. On ascending the hills, the lofty spires of the Bad Lands first rise to view like a magnificent city imprinted on the sky. At the head of Teton River the Cretaceous bed No. 5 becomes quite conspicuous, attaining a thickness of about eighty feet. Very few fossils are found in it at this locality. I succeeded in finding a single shell and the tooth of a fish, and Mr. Meek discovered in 1853 tracks of Planarian worms. Here the country changes from dreary sterility, with poor water and grass, to a cheerful aspect, fine springs, and a comparatively luxuriant vegetation.

Ascending the high hills at this point, we pass over the broad Plateau along side of the Bad Lands, their lofty pyramids rising high above the surrounding prairie. Eight miles farther we come to Pinao's Spring, a noted camping place for travellers. Near this place a ridge extends from the Bad Lands across the prairie toward the head of opening creek, about thirty feet in height, its sides gently sloping and covered with grass. Scattered over this ridge are numerous thin slabs of whitish limestone with fresh water shells, which have been changed into a semitransparent chalcedony. There are also concretionary masses of argillaceous limestone fully charged with these fossils in a fine state of preservation. These fossils were first discovered by Drs. Evans and Shumard in 1853, and have been indicated by them in the Proceedings of the Philadelphia Academy. They consist of *Planorbis*, *Limnea*, *Physa* and a small crustacean. Several undescribed species have since been obtained from this locality, also a few teeth and jaws of Mammals, comminuted remains of fishes, and the seeds of a small species of *Chara*. The discovery of these fossils afforded us positive evidence of the lacustrine character of this deposit.

This ridge forms bed D of the vertical section, and is composed mainly of yellow and light yellow calcareous marl.

Approaching Sage creek the country becomes exceedingly broken. The Cretaceous bed No. 5 forms numerous pyramidal hills, some of them with almost vertical sides, their summits paved with well water-worn pebbles from the Drift. In the channel of Sage creek the Cretaceous bed No. 4 makes its appearance, and forms a remarkable locality for its peculiar fossils. Continuing our westerly course, we come to Bear creek, the usual camping place of visitors to the

---

* See Vertical Section, in a paper by F. B. Meek and F. V. Hayden, in Proceedings of the Academy for May, 1857.

Bad Lands. Passing over the deep valley formed by this stream, we again ascend to a broad plateau which slopes gently away northward to the valley of the Shyenne. In the west the lofty range of the Black Hills is seen about sixty miles distant, like a black cloud looming up above the horizon. Turning to the left we descend about fifty feet into the basin of the Bad Lands, a large area worn out as it were by the long continued action of atmospheric agencies, the material having been carried away by Bear creek and another tributary of the Shyenne. After making our descent we pass over a portion of this denuded area two or three miles in width, which is studded with low conical hills, on the sides and at the base of which are numerous dull reddish silico-argillaceous concretions, having much the shape and appearance of huge turtles. From these concretions Messrs. Hall and Meek have described a remarkable *Baculite*, (*B. grandis*,) a true Cretaceous fossil, the position of which is in the upper portion of a bed upon which the lowest stratum of the Tertiary basin of the Bad Lands rests.

Pursuing from thence a south-westerly course, we commence a gradual ascent and pass the junction of the two great Geological systems, the Cretaceous and Tertiary, into the Titanotherium bed, the lowest member of this Tertiary basin. We have, first, an ash-colored silico-argillaceous stratum with a greenish tinge, interspersed with large aggregated masses of particles of quartz, passing up into a light gray calcareous grit. In my vertical section I have concluded to throw all these strata, though presenting some lithological differences, into one bed, from the fact that the remains of the huge *Pachyderm* that has given it its name, are distributed to a greater or less extent all through it. To the *Titanotherium* may now be added another pachyderm discovered by the writer in 1855, and described by Dr. Leidy under the name of *Hyopotamus americanus*.

Passing over a nearly level denuded area about five miles in width, underlaid by this bed, he came to the Turtle and Oreodon bed, so called from the immense numbers of the remains of these animals found in it. This forms the lower member of bed B of the vertical section, and is by far the most fossiliferous portion of the Bad Lands. Besides the remains of *Oreodon* and *Testudo*, which are most abundant, many other species of vertebrates have been described by Dr. Leidy from this bed. They are found in the debris on the denuded plateau, or at the base of the Bluffs, and from the nearly perpendicular walls the Turtles often project like large colored concretions. Some of the Turtles are of large size, measuring four feet in length and three to three and a half feet in width. The most abundant species of Mammal appears to have been the *Oreodon Culbertsonii*, of which fragments of more than five hundred individuals have already been obtained from an area not over five miles square, surrounding Ash Grove Spring, which is near the central portion of the Bad Lands.

The scenery is of the most remarkable and picturesque character. No vegetation meets the eye, but on every side are high bare whitened walls, and the traveller winds his way through these labyrinthine passages as if in the gloomy apartments of some oriental sepulchre. Continuing our ascent, we come to the dividing ridge between the Shyenne and White rivers, ranging north-east and south-west through the central portion of the Bad Lands, in which the little tributaries of these two rivers take their rise. Here the Turtle and Titanotherium beds are concealed, and the upper members of this deposit are well exhibited. Descending the slope toward White River the Turtle bed again appears, and in the channel of White River a stratum of fine gray grit is seen, the upper portion of the bed containing bones of Titanotherium Prouti. Crossing White River we pass down the south side of the main body of the Bad Lands, and find that on this side the beds consist mostly of outliers holding a higher geological position than those at Bear Creek or Ash Grove Spring. Near the entrance of Mule Creek and of several of the tributaries of White River, are some beautiful exhibitions of the architectural features of the Bad

Lands. They remind one of some ancient city with its palaces, domes and towers. At the mouth of Mule Creek we have one of the most picturesque views in this region. An area of two miles wide and six miles long has been worn away by the eroding agency of water into myriads of conical and pyramidal peaks, high sharp ridges and deep winding canons two hundred and fifty to three hundred feet in depth. The summits of these ridges are capped with layers of coarse-grained sandstone, containing many whitish particles of clay which have been dissolved out by exposure, and give to the rock the appearance of worm-eaten masses. We then have underneath the sandstone a yellowish calcareous marl passing down into a light gray grit; then the flesh-colored Turtle bed with its peculiar fossils. Most of the same organic remains are found here as at Bear Creek or Ash Grove Spring, but not near so abundant. A species of land shell, *Helix Leidyi*, a single specimen of which was discovered at Bear Creek in 1853 by Mr. Meek and the writer, occurs at this locality in great numbers. Continuing our course down the south bank of White River, we see on our left the main range of the Bad Lands rising high above the surrounding country, and extending in an easterly direction to the head of Teton River, where it ceases abruptly. On our left as far as the eye can reach we see outliers of the Tertiary exposing their whitened surfaces, and resting upon Cretaceous bed No. 5.

Nearly in a direct line south of Grindstone Hills, and near the dividing ridge between White and Running Water Rivers, we meet with a high outlier of Tertiary called Eagle Nest Hill, from the fact that an eagle has built her nest on its summit from time immemorial. This hill is about eighty feet in height above the surrounding prairie, with nearly perpendicular sides, composed mostly of indurated clay with a mixture of calcareous matter. Not far distant is another hill of the same formation, about a mile long, and covered to some extent with pines and capped with a bed of sandstone twenty to thirty feet in thickness. All around the base of these hills the Cretaceous bed No. 5 is seen with a few of its peculiar fossils.

About ten miles north east of this point, near White River, we meet with a denuded area which presents some peculiarities worthy of note. Here I observed a vertical seam of fine-grained sandstone passing through the different strata for several hundred yards, varying in thickness from four to thirty inches. Sometimes this vertical seam is left standing, the more yielding calcareous marl having been washed away from either side, and thus it forms a high perpendicular wall having much the appearance of mason work. It is composed of a fine, light gray grit, and is doubtless due to the infiltration of fine sediment in a fissure in the strata. At this locality we have, in descending order, rather fine grained gray sandstone, then a yellowish or flesh-colored calcareous marl, containing many tough argillo-calcareous concretions. This forms bed E of vertical section, and contains at this locality numerous remains of turtles and mammals. Within the space of a mile I saw of turtles—portions more or less entire—more than thirty individuals. Fragments also of Oreodon, Rhinoceros and several new species of Mammalia, one of which Dr. Leidy has described as *Steneofiber Nebrascensis.*

We continue to see quite numerous isolated patches of this deposit until reaching the forks of White River, below which point they almost entirely cease, and the river cuts deeply through Cretaceous bed No. 5 into No. 4. The alluvial bottoms are composed of the light-colored clays and sands of the Bad Lands, but the bluffs are formed of the yellow and dark ash-colored clays of the Cretaceous formation, with a few fossils, as *Baculites*, *Ammonites*, *Inoceramus*, *&c.* Passing down the Missouri River, the next indication of the Tertiary deposit is at Medicine Hills, about eighty miles below Fort Pierre. These are a lofty group of hills, the upper portions and sides of which are covered with large fragments of rocks, which seem to have been removed from their position by denudation. This rock holds the same geological position and is similar to that on Bijou Hills, but is, in some instances, of a finer and more compact silicious character, and in others a coarser conglomerate. These Hills are of considerable interest, as forming an intermediate link uniting Bijou Hills to the main body of the Bad Lands. The two upper beds of the vertical section are represented at this locality. The last outlier of this deposit is seen at Bijou Hills on the opposite side of the Missouri River in lat. 43½°. These are a group of isolated hills towering high above the surrounding country and forming prominent land marks for the voyager. The two highest hills border upon the river and are from four to six hundred feet in height. Farther into the interior are two other hills, the first about two miles long, and the second about eight miles, ranging in a nearly east and west course, sloping gently down toward the Coteau de Prairie. In the summer of 1853 I ascended one of the hills nearest the river in company with my friend Mr. Meek, and, from a denuded portion near the summit, we obtained several fragments of jaws and teeth belonging to two new species of mammals, which have been described by Dr. Leidy as *Hipparion speciosum* and *Merycadus necatus*. In the autumn of 1856 I discovered on the denuded summits of the same hills *Hipparion occidentalis* and two new genera, *Leptarctus primus*, an animal allied to the raccoon, and *Merychippus insignis*, a remarkable new genus of ruminant horse. These remains have all been described by Dr. Leidy in the Proceedings of the Philadelphia Academy.

The summits of these hills are capped with a bed of bluish-gray compact rock, quite variable in its character. Sometimes it is very fine, not unlike a metamorphic rock; again it is composed of an aggregation of particles of granular quartz, interspersed with a few small water-worn pebbles; then a coarse grained somewhat friable sandstone. Farther into the interior, capping the summit of the long hill, this rock may be seen in places twenty to thirty feet in thickness. The calcareous grits and marls underneath, may be subdivided in descending order thus :—

1*st*.—Yellowish-gray grit, with compact, fine calcareous concretions.

2*nd*.—Yellowish-white calcareous marl, containing great quantittes of the comminuted fragments of bones.

3*rd*.—Compact whitish calcareous clay, with a few vertebrate remains and concreting limestone. The aggregate thickness of these beds I could not determine, as the sides of the hill were, for the most part, covered with a surface deposit of considerable thickness, sustaining a good growth of vegetation.

The foregoing notes are designed merely as preliminary to a more thorough description of the geological character of this most interesting deposit. Its Miocene age and the Miocene affinities of most of the genera and species of fossils yet obtained from it have already been discussed in an interesting paper by Prof. Leidy, published in the Proceedings of the Academy for March, also in a paper by F. B. Meek and the writer, published in the Proceedings for April.

The Zoological arrangement of the Catalogue is copied from Prof. Leidy's paper published in March last. The object of the table is simply to show as far as has been ascertained the stratigraphical position of the different fossils, and the letters are made to correspond with those representing the beds in the vertical section.

The illustrative section accompanying this paper is intended to show the relations of the Tertiary basin to the Cretaceous beds, and especially to render more clear the connections of the widely separated outliers, Medicine Hills and Bijoux Hills with the main body of the Bad Lands.

*Catalogue of all the Fossils hitherto described from the Bad Lands of White River, with a table showing their Stratigraphical position.*

| | Beds in ascending order. | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G |
| RUMINANTIA. | | | | | | | |
| 1. Oreodon gracilis, Leidy | ... | * | ... | ... | ... | ... | ... |
| 2. Oreodon Culbertsoni, Leidy | ... | * | ... | ... | * | ... | * |
| 3. Oreodon major, Leidy | ... | * | ... | ... | ... | ... | ... |
| 4. Agriochœrus major, Leidy | ... | * | ... | ... | ... | ... | ... |
| 5. Agriochœrus antiquus, Leidy | ... | * | ... | ... | ... | ... | ... |
| 6. Pœrbotherium Wilsoni, Leidyi | ... | * | ... | ... | ... | ... | ... |
| 7. Leptomeryx Evansi, Leidy | ... | * | ... | * | * | ... | ... |
| 8. Leptauchenia decora, Leidy | ... | * | ... | ... | * | ... | ... |
| 9. Leptauchenia major, Leidy | ... | * | ... | ... | ... | ... | ... |
| 10. Protomeryx Halli, Leidy | ... | ... | ... | ... | * | ... | ... |
| 11. Merycodus necatus, Leidy | ... | ... | ... | ... | ... | ... | * |
| MULTUNGULA. | | | | | | | |
| 12. Chœropotamus (*Hyopotamus*) americanus, Leidy | * | ... | ... | ... | ... | ... | ... |
| 13. Entelodon Mortoni, Leidy | ... | * | ... | ... | ... | ... | ... |
| 14. Entelodon ingens, Leidy | ... | * | ... | ... | ... | ... | ... |
| 15. Titanotherium Prouti, Leidy | * | ... | ... | ... | ... | ... | ... |
| 16. Palæochœrus prolus, Leidy | ... | * | ... | ... | * | ... | ... |
| 17. Leptochœrus spectabilis, Leidy | ... | * | .. | ... | * | ... | ... |
| 18. Rhinoceros occidentalis, Leidy | ... | * | ... | ... | ... | ... | ... |
| 19. Rhinoceros (*Hyracodon*) nebrascensis, Leidy | ... | * | ... | ... | * | ... | ... |
| SOLIDUNGULA. | | | | | | | |
| 20. Hipparion occidentale, Leidy | ... | ... | ... | ... | * | ... | * |
| 21. Hipparion speciosum, Leidy | ... | ... | ... | ... | ... | ... | * |
| 22. Anchitherium Bairdii, Leidy | ... | * | ... | ... | ... | ... | ... |
| 23. Merychippus insignis, Leidy | ... | ... | ... | ... | ... | ... | * |
| RODENTIA. | | | | | | | |
| 24. Steneofiber nebrascensis, Leidy | ... | ... | ... | ... | * | ... | * |
| 25. Ischyromys typus, Leidy | ... | * | ... | ... | ... | ... | ... |
| 26. Palæolagus Haydeni, Leidy | ... | * | ... | ... | ... | ... | ... |
| 27. Eumys elegans, Leidy | ... | * | ... | ... | ... | ... | ... |
| CARNIVORA. | | | | | | | |
| 28. Hyænodon horridus, Leidy | ... | * | ... | ... | ... | ... | ... |
| 29. Hyænodon cruentus, Leidy | ... | * | ... | ... | ... | ... | ... |
| 30. Hyænodon crucians, Leidy | ... | * | ... | ... | ... | ... | ... |
| 31. Amphicyon vetus, Leidy | ... | * | ... | ... | ... | ... | ... |
| 32. Amphicyon gracilis, Leidy | ... | * | ... | ... | ... | ... | ... |
| 33. Machairodus primævus, Leidy | ... | * | ... | ... | ... | ... | ... |
| 34. Deinictis felina, Leidy | ... | * | ... | ... | ... | ... | ... |
| 35. Leptarctus primus, Leidy | ... | ... | ... | ... | ... | ... | * |
| CHELONIA. | | | | | | | |
| 36. Testudo nebrascensis, Leidy | ... | * | ... | ... | * | ... | ... |
| MOLLUSCA. | | | | | | | |
| 37. Helix Leidyii, Hall & Meek | ... | * | ... | ... | ... | ... | ... |
| 38. Planorbis nebrascensis, Evans & Shumard | ... | ... | ... | * | ... | ... | ... |
| 39. Lymnea diaphana, Evans & Shumard | ... | ... | ... | * | ... | ... | ... |
| 40. Lymnea nebrascensis, Evans & Shumard | ... | ... | ... | * | ... | ... | ... |
| 41. Physa secalina, Evans & Shumard | ... | ... | ... | * | ... | ... | ... |
| CRUSTACEA. | | | | | | | |
| 42. Cypris Leidyii, Evans & Shumard | ... | ... | ... | * | ... | ... | ... |

# **Prodromus descriptionis animalium evertebratorum, quæ in Expeditione ad Oceanum Pacificum Septentrionalem, a Republica Federata missa, Cadwaladaro Ringgold et Johanne Rodgers Ducibus, observavit et descripsit**

W. STIMPSON.

## PARS. II. *TURBELLARIEORUM NEMERTINEORUM*

### GENERUM ET SPECIERUM ADHUC INEDITARUM DESCRIPTIONES; ADJUNCTIS NOTIS DE GENERIBUS JAM CONSTITUTIS.

Characteres, ex quibus generum distinctiones pendent in hoc tribu, sunt: corporis forma, longissima v. brevior et lata, plana v. teretiuscula; forma capitis discreti v. continui; positio proboscidis aperturæ, (os, *Quatref.*,) terminalis v. subterminalis; et præsentia aut absentia aperturæ ventralis, (os, *Grube; apertura* genitalis, *Quatref.*) lobarum, plicarum frontalium, fissurarum lateralium, et ocellorum. Aperturam parvulam (anum v. ap. genitalem) apud extremitatem corporis posteriorem describunt auctores, quam nunquam invenire potui in speciebus quas observavi.

Genera adhuc proposita sunt:

LINEUS, Sowerby, 1804.
TUBULANUS, Renier, 1807.
CEREBRATULUS, Renier, 1807.
*Nemertes*, Cuvier, 1817. = LINEUS.
*Borlasia*, Oken, 1817. = LINEUS.
LOBILABRUM, Blainville, 182–.
*Polia*, Delle Chiaje, 1823. Præoc.—*Polia*, Ochsenheim, Ins. 1816.
OPHIOCEPHALUS, Delle Chiaje, 1823.
*Meckelia*, Leuckart, 1828. = CEREBRATULUS.
NOTOSPERMUS, Huschke, 1830.
MICRURA, Hemprich et Ehrenb., 1831.
TETRASTEMMA, Hemp. et Ehrenb., 1831.
OMATOPLEA, Hemp. et Ehrenb., 1831.
HEMICYCLIA, Hemp. et Ehrenb., 1831.
POLYSTEMMA, Hemp. et Ehrenb., 1831.
AMPHIPORUS, Hemp. et Ehrenb., 1831.
*Notogymnus*, Hemp. et Ehrenb., 1831. = NOTOSPERMUS.
*Tricelis*, Hemp. et Ehrenb., 1831. = NOTOSPERMUS.
*Carinella*, Johnston, 1833; fide ejusd. = *Meckelia.* (CEREBRATULUS.)
*Acrostomum*, Grube, 1840. (v. *Acrostoma*, Le Sauv., Verm., 1826.)
RHAMPHOGORDIUS, Rathke, 1843.
CEPHALOTRIX, Oersted, 1844.
BORLASIA, Oersted, 1844.
NEMERTES, Oersted, 1844.
*Amphiporus*, Oersted, 1844. (non Ehrenb.)
ASTEMMA, Oersted, 1844.
SERPENTARIA, Goodsir, 1845.
VALENCINIA, Quatref., 1846.
OERSTEDIA, Quatref., 1846.
SCOTIA, R. Leuckart, 1849.
BASEODISCUS, Diesing, 1850.
CÒLPOCEPHALUS, Diesing., 1850.
CHLAMYDOCEPHALUS, Diesing, 1850.
PRORYNCHUS, Schultze, 1851.
EMEA, Leidy, 1851.
HECATE, Girard, 1852.
POSEIDON, Girard, 1852.
NAREDA, Girard, 1853.
RENIERIA, Girard, 1853.
*Leodes*, Girard, 1853. = Cerebratulus.

## *Descriptiones specierum Expeditionis.*

### A. Apertura ventralis infra caput v. cervicem sita. Ocelli nulli.

### *a.* Fissuræ laterales in capitis marginibus.

### 1. Corpus normale.

### Genus LINEUS, Sowerby.

Corpus depressum lineare, longissimum. Caput vix subdiscretum, quadratum, antice late truncatum, apertura proboscidis terminali ampla. Apertura ventralis ante fissurarum finem posteriorem sita, sepius subterminalis.

*L. longissimus*, Sowerby, =*Meckelia Borlasii*, Diesing, typus est generis *Nemertes* Cuvierii et generis *Borlasia* Okenii.

1. Lineus piperatus. *Meckelia piperata*, St. Proc. Acad. Nat. Sci. Philada. vii. 381. Corpus gracile, retrorsum vix dilatatum, supra pallide fulvum, nigro punctatum et transverse notatum, fascia longitudinali mediana nigra antice interrupta; marginibus albis. Caput rectangulare, maculis duabus nigris magnis. Fissuræ sat longæ, subobliquæ, ad finem posteriorem supra visæ. Apertura ventralis parva, ovalis. Long. 8; lat. 0·1 poll.

*Hab.* In portu insulæ "Kikaisima" Japoniæ Australis; sublittoralis inter lapillos et algas.

### Gen. CEREBRATULUS, Renier.

Corpus depressum v. teretiusculum, postice sepius plus minusve dilatatum; longitudine mediocre. Caput corpori continuum v. subdiscretum, oblongum v. elongatum; apertura proboscidis terminali minuta. Apertura ventralis sepius minor et fine posteriore fissurarum lateralium opposita. Fissuræ ad cervicem productæ. **Species errantes non fossores.**

Species ambæ Renieri fide Diesingii ad genus *Meckelia* auctorum pertinent. Ergo rationis nihil est quin nomen supra dictum reciperetur.

2. Cerebratulus impressus. Complanatus, in medio dilatatus, utrinque subangustatus; supra griseo-fuscus, lineis impressis (v. sulcis linearibus) transversis incoloratis. Caput parvum subtruncatum corpori multo angustius, carneum, punctis fuscis prope angulos antero-laterales. Apertura ventralis contra finem fissurarum. Long. 3·8; lat. 0·35 poll.

*Hab.* Prope insulas freti Beringiani; in fundo limoso profunditate 20 orgyiarum.

3. Cerebratulus paludicolus. Depressus, utrinque obtusus, postice vix dilatatus; sanguineus, antice nigricans, postice pallens olivaceus. Caput sat latum, quadratum, ad apicem apiculatum. Apertura ventralis ad finem fissurarum lateralium. Long. 2·5; lat. 0·1 poll.

*Hab.* Prope urbem Sinensem "Canton;" littoralis in aquis subsalsis fluvii.

4. Cerebratulus oleaginus. *Meckelia olivacea*, St. l. c. vii. 390. Supra convexus, antice latior, colore obscure olivaceus; postice pallidior, virens. Caput breve, continuum et equalis latitudinis corpori, fronte elliptice rotundata; apertura proboscidis rima verticali. Apertura ventralis ampla. Long. 3; lat. 0·1 poll.

*Hab.* Apud Promontorium Bonæ Spei; vulgaris in fundo arenoso profunditatis 15 orgyiarum.

5. Cerebratulus albovittatus. *Meckelia albovittata*, St. l. c. vii. 382. Gracilis, supra viridis, subtus pallidior. Caput continuum, elongatum, subrectangulare, truncatum, quam corpus angustius; fascia transversa submediana alba; ante fasciam albo-marginatum. Fissuræ ultra fasciam longe productæ. Long. 3; lat. 0.09 poll.

*Hab.* Ad insulam "Loo Choo;" littoralis inter algas in rupium fissuris.

6. Cerebratulus cingulatus. *Meckelia cingulata*, St. l. c. vii. 381. Gracilis, teretiusculus; purpureo-fuscus, albo-annulatus, annulis angustis distantibus

binis, ad decem paria. Caput discretum, corpori multo angustius, oblongum, antrorsum subattenuatum truncatum; albomarginatum, fascia transversa bilunata alba, ante medium sita. Apertura ventralis minor. Long. 4; lat. 0·12 poll.

*Hab.* Prope insulam Sinensem "Hong Kong;" inter lapillos e profunditate 25 orgyiarum.

7. Cerebratulus fasciatus. Valde depressus, retrorsum dilatatus, antrorsum subangustatus; purpureo-fuscus, lineis transversis subdistantibus albis annulatus; linea cervicali latiore. Caput oblongum subdiscretum, fronte subtruncata albomarginata. Apertura ventralis parva, elliptica, ad finem fissurarum.

*Hab.* Apud oras insulæ "Jesso" Japoniæ Borealis; in fundo arenoso-limoso profunditatis 4 orgyiarum.

8. Cerebratulus bellus. Parvus, brevis, depressus, utrinque subtruncatus, in medio vix dilatatus; supra cinereo-fuscus, fasciis aut lineis transversis ceruleo-albis ad decem ornatus; subtus albus. Caput breve, cinnabarinum. Long. 0·75; lat. 0·05 poll.

*Hab.* Prope oras insulæ "Jesso;" in conchis desertis e fundo limoso profunditatis sex orgyiarum.

9. Cerebratulus niger. *Meckelia nigra*, St. l. c. vii. 382. Elongatus, antice angustatus, e purpureo nigricans; postice depressus et subdilatatus, pallescens. Caput subdiscretum, elongatum, antrorsum angustatum, apice truncato, macula alba ad proboscidis aperturam. Long. 3; lat. 0·18 poll.

*Hab.* In portu Sinensi "Hong Kong;" in fundo conchoso profunditatis decem orgyiarum.

10. Cerebratulus Sinensis. *Meckelia Sinensis*, St. l. c. vii. 382. Teretiusculus, rufo-brunneus, retrorsum parum dilatatus. Caput discretum, elongatum, antrorsum angustatum truncatum, pallide fulvum, maculis rufo-brunneis, postice confertis, antice sparsis. Long. 1·5; lat. 0·1 poll.

*Hab.* In portu "Hong Kong;" in fundo conchoso profunditatis 10 org.

11. Cerebratulus nigrofuscus. Gracillimus, sublinearis, postice subattenuatus, depressiusculus, supra e rubro-fuscus nigricans. Caput corpori continuum, elongatum, ad frontem truncatam latitudine dimidium latitudinis occipitalis. Apertura ventralis linearis paullo pone finem fissurarum sita. Long. 5·5; lat. 0·07 poll.

*Hab.* Ad insulam "Ousima" Japoniæ Australis; littoralis inter lapillos.

## MECKELIA, Auct. limit.

Corpus depressum, retrorsum dilatatum, interdum subplanum, marginibus acutis. Caput lanceolatum, apertura proboscidis terminali minuta. Apertura ventralis ampla, sepius paulo post finem fissurarum lateralium sita. Fossores in limo vel arena marina.

12. Meckelia subacuta. Antice vix depressa, carnea; postice depressa subdilatata, sanguineo-fusca, extremitate rotundata. Caput continuum, elongatum, fronte acuta. Long. 3·5; lat. 0·1 poll.

*Hab.* In portu "Napa" insulæ "Loo Choo;" littoralis in limo.

13. Meckelia albula. Depressa, alba; postice dilatata, pallide aurantiaca. Caput lanceolatum, pallide griseum, strictura discretum; apice obtuso; marginibus ad cervicem fissis. Apertura ventralis contra finem fissurarum sita. Long. 3; lat. 0·25 poll.

*Hab.* In mari Sinensi Boreali, lat. bor. 23°, long. orient. 115°; in fundo arenoso profunditatis 24 org.

14. Meckelia australis. Sat grandis, crassa, depressa, marginibus acutis; colore carnea. Caput obtusum, fissuris brevioribus. Apertura ventralis grandis, antice acuta, postice bifurcata. Long. 6; lat. 0·3 poll.

*Hab.* In portu Jacksoni Australiensi; sublittoralis in arenis lapidosis.

### SERPENTARIA, Goodsir.

*Meckeliæ* affinis sed apertura ventrali majore, infra caput et ante cervicem sita. Fossores.

15. SERPENTARIA RUBELLA. *Meckelia rubella*, St. l. c. vii. 382. Brevis, postice valde dilatata, colore salmonis, pallida. Caput discretum, parvum, late lanceolatum. Fissuræ valde elongatæ, post cervicem productæ; apertura ventralis longe elliptica. Long. 2; lat. 0.3 poll.
*Hab.* In portu "Hong Kong;" in fundo limoso profunditatis 10 org.

2. Corpus lateribus involutis.

### DIPLOPLEURA, nov. gen.

Corpus elongatum dilatatum, lateribus (pone caput) supra involutis, marginibus in linea dorsali mediana vix convenientibus. Caput subdiscretum, triangulare vel subcordatum, fissura longitudinali in utroque margine ad cervicem producta. Apertura proboscidis terminalis minuta. Apertura ventralis parvula, infra corpus, post cervicem sita subdistans. Ocelli nulli. Maricolæ.

16. DIPLOPLEURA JAPONICA; species unica, gracilis, colore helva. Long. 1·5; lat. 0·12 poll.
*Hab.* In sinu "Kagosima" insulæ "Kinsiu" Japoniæ; in arenis profunditatis quinque org.

*b.* Fissuræ laterales nullæ.

1. Apertura proboscidis terminalis.

### TÆNIOSOMA, nov. gen.

Corpus grande, longissimum, lineare, depressum, utplurimum supra infraque lineatum. Caput vix discretum, breve, sulco indistincto (rima obsoleta v. linea impressa incolorata) longitudinali in utroque margine. Apertura ventralis parvula post-cervicalis. Species in maribus orientalibus habitantes.

A *Borlasia* differt corpore majore, minus contractile, et capite sulcis lateralibus instructo. *Borlasia quinquelineata*, Quoy et Gaimard, (Voy. de l'Astrolabe; Zool. iv. 285, Atlas, T. xxiv. f. 1—2) ad hoc genus pertinet.

17. TÆNIOSOMA SEPTEMLINEATUM. Corpus depressum, retrorsum complanatum subangustatum, supra album, lineis longitudinalibus antice septem, postice quinque ornatum; subtus bilineatum. Caput lineis supra tribus (interdum quinque,) subtus duabus. Long. bi- v. tri-pedalis; lat. 0·35 poll.
*Hab.* Ad insulas freti "Gaspar;" sublittorale.

18. TÆNIOSOMA ÆQUALE. Corpus lineare subobesum, cœruleo-album, lineis purpureo-nigris supra quinque (tribus v. quatuor in capite,) subtus duabus ornatum; lineis omnibus ad corporis extremitates convenientibus. Caput continuum, antrorsum rotundatum. Apertura ventralis parva, multo post cervicem sita. Long. bipedalis; lat. 0·32 poll.
*Hab.* in sinu insulæ "Ousima;" littorale sub lapidibus.

2. Apertura proboscidis infra caput.

### VALENCINIA, Quatref.

18. VALENCINIA ELEGANS. *V. annulata*, St. (non Quatref.) l. c. vii. 380. Gracilis, fere linearis, supra convexa. Caput breve, paullo latius quam corpus, late truncato, fronte in medio sinuata, lateribus rotundatis. Corpus supra purpureo-fuscum, trilineatum; lineis albis, mediana antice in fronte, lateralibus post cervicem incipientibus; et fasciis transversis albis ad 16 annulatum. Caput fascia postfrontali pallide fusca. Long. 3; corporis lat. 0·08 poll.
*Hab.* Prope Promontorium Bonæ Spei; inter algas in fundo arenoso profunditatis 12 org. Tubulum membranaceum format.

B. Apertura ventralis nulla. Ocelli duo vel plurimi.

*a.* Fissuræ v. foveæ in capitis marginibus.

### DICHILUS, nov. gen.

Corpus lineare depressum, longitudine mediocre. Caput corpori continuum subquadratum, plica transversa terminali bilabiatum; labio inferiore emarginato. Ocelli duo subterminales. Cervix supra rimis obsoletis (pseudorimis) impressa. Maricolæ.

20. Dichilus obscurus. Corpus supra pallide rubro-fulvum, maculis duabus oblongis in capite. Ocelli fusci, sat magni, subdistantes, in maculis siti. Pseudorimæ cervicales tres; una mediana longitudinalis, ex cujus mediâ aliæ versus marginem utrinque oblique extendunt. Long. 3; lat. 0·08 poll.
*Hab.* In portu insulæ "Ousima;" littoralis inter lapillos.

### TETRASTEMMA, Hemp. et Ehrenb.

Corpus filiforme teretiusculum v. lineare depressum; longitudine mediocre. Caput discretum v. subdiscretum, fovea transversa in media utriusque lateris; fronte truncata; apertura proboscidis in rima transversa terminali. Ocelli quatuor, duo postfrontales ante foveas; duo occipitales. Maricolæ.
*T. flavidum*, H. et E. typus est;—"pone primos oculos levis incisura distinguitur, quæ forte capitis limites indicat." *Polia sanguirubra*, *coronata*, *vermiculus*, et *humilis*, Quatref., mihi videtur ad hoc genus pertinent.

21. Tetrastemma stigmatum. Parvum, teretiusculum, gracile; pallide aurantiacum. Caput discretum, paullo longius quam latum, antice subattenuatum; foveis validis; pone ocellos anteriores fascia transversa obscure rubra. Ocelli posteriores paullo majores. Long. 1; lat. 0.05 poll.
*Hab.* In sinu "Hakodadi" insulæ "Jesso;" in fundo limoso et algoso profunditatis 6 org.

22. Tetrastemma incisum, St. l. c. vii. 380. Corpus parvum teretiusculum, utrinque subattenuatum; pallide fuscum. Caput quadratum, dimidiam partem longius quam latum; strictura discretum; foveis interocularibus stricturæ similibus. Ocelli æquales. Long. 0·4; lat. 0·025 poll.
*Hab.* Prope Promontorium Bonæ Spei; in fundo arenoso et algoso profunditatis 12 org.

### CEPHALONEMA, nov. gen.

Corpus teretiusculum filiforme. Caput rhomboidale, antrorsum subconicum; strictura discretum; fovea transversa in utroque latere. Apertura proboscidis terminalis. Ocelli duo occipitales. Maricolæ.

23. Cephalonema brunniceps. Corpus subpellucidum pallide flavo-carneum; gracile, retrorsum attenuatum. Caput antice obscure fuscum, postice fulvum; fascia transversa alba ante ocellos; fronte lineis tribus albis notata. Long. 2; lat. 0·05 poll.
*Hab.* In portu Sinensi "Hong Kong;" sublittorale sub lapidibus in limo.

### EMPLECTONEMA, nov. gen.

Corpus longissimum subfiliforme, depressum, proteum. Caput subdiscretum, stricturis nullis; fovea longitudinali in utroque margine antero-laterali. Ocelli plurimi. Maricolæ.
E. camillea. *Borlasia camillea*, Quatref., Voy. en Sicile, ii. pl. x. f. 4, 5.

24. Emplectonema viride. Corpus depressum, lineare v. proteum, supra viride, subtus album. Caput subdiscretum, marginibus albis; foveis elongatis bipartitis; fronte emarginata. Ocellorum acervi quatuor; posteriores distincti rotundati, ocellis confertis; anteriores marginales juxta foveas, ocellis sparsis Long. 11; lat. 0·05 poll.
*Hab.* In portu "San Francisco;" littoralis inter lapillos.

### *b.* Foveis nullis.

### 1. Ocelli duo.

### DIPLOMMA, nov. gen.

Corpus depressiusculum. Caput discretum, fronte emarginata, apertura proboscidis terminali. Fissuræ laterales nullæ. Ocelli duo; singulus bilobatus, quasi ex duabus constatus. (Cerebella cervicalia, valde remota. Cavum intestinale angustius; cava genitalia ampla.) Maricolæ.

25. Diplomma serpentina. *Nareda serpentina*, St. l. c. vii. 338. Corpus elongatum gracile, fere lineare, antrorsum vix attenuatum; supra pallide rubrum, linea mediana brunnea. Caput subovatum; sinu aperturæ proboscidis magno. Ocelli magni, sat remoti, in media parte capitis oblique siti, retrorsum convergentes. Cerebella rosea. Long. 3; lat. 0·05 poll.

*Hab.* Ad littora insulæ "Loo Choo;" sub lapidibus in locis arenoso-limosis.

### DICELIS, nov. gen.

Corpus lineare, depressiusculum, utrinque obtusum. Caput continuum vel subdiscretum, fronte emarginata, apertura proboscidis terminali. Ocelli duo simplices, rotundati, subterminales. Maricolæ.

26. Dicelis rubra. Subfiliformis, depressiuscula, antice subattenuata; colore rubra vel purpurea. Cervix quam caput vix angustior. Caput antice rotundata et emarginata. Ocelli duo parvi subterminales. Long. 1·5; lat. 1·03 poll.

*Hab.* Prope insulam "Tanega" Japoniæ Australis; inter Balanos et spongias saxatiles e profunditate 12 org.

### 2. Ocelli plurimi.

### POLYSTEMMA, Hemp. et Ehrenb., Diesing; non Oersted.

Caput strictura a corpore discretum, parte anteriore subcontracta, valde extensibili, extremitate obtusa, apertura proboscidis terminali. (Cauda sepius non dilatata; specimen unicum Ehrenbergii forsitan postice deformatum sit.)

27. Polystemma sinuosum. Gracile, depressiusculum, album, interdum carneo-tinctum; capite subelongatum. Ocelli sat magni, magnitudine variabiles; duo in capitis parte posteriore; plurimi sparsi in parte anteriore, qui in acervos quatuor irregulariter aggregati, posteriores minores. Long. 1·15: lat. 0·08 poll.

*Hab.* In portu "Hong Kong;" inter conchas desertas e prof. 10 org.

### POLINA, nov. gen.

Corpus valde contractile, depressiusculum, longitudine mediocre. Caput discretum v. subdiscretum, strictura nulla; apertura proboscidis terminali in margine frontali inferiore. Proboscis lævis. Ocelli in acervos quatuor aggregati. Maricolæ.

28. Polina rhomboidalis. *Polia rhomboidalis*, St. l. c. vii. 390. Corpus depressiusculum, antrorsum latius, colore pallida rubrum, fasciis duabus longitudinalibus inconspicuis. Caput parvum, subdiscretum, breve, antice rotundatum. Ocelli quatuor in utroque acervo, in rhombum dispositi; acervi posteriores minores, in maculis obscurioribus siti. Long. 1; lat. 0·05 poll.

*Hab.* In portu Jacksoni Australiensi; littoralis sub lapidibus.

29. Polina grisea. *Polia grisea*, St. l. c. vii. 390. Corpus sat longum depressiusculum, in extentione subcylindricum, colore pallide griseum. Caput discretum, ovatum v. subcordatum, quam corpus angustius, antice acutum. Ocellorum acervi anteriores majores, elongati, in parte antero-laterali capitis submarginales dispositi; ocelli decem in utroque acervo. Acervi posteriores cervicales, parvi, lineares; utroque quatuor ocelli. Long. 0·8; lat. 0·04 poll.

*Hab.* In portu Virginiano "Norfolk;" sublittoralis inter ulvas in locis limosis.

30. **Polina cervicalis.** Corpus gracile, supra salmonea. Caput discretum late rhomboidale, antice obtusum et emarginatum. Ocelli minuti, in acervos quatuor confluentes aggregati; anterioribus elongatis lateralibus; posterioribus rotundatis sublateralibus. Cervix bene angustata. Long. 3; lat. 0·09 poll.
*Hab.* In portu "Simoda" Japoniæ; littoralis inter lapides.

### TATSNOSKIA, nov. gen.

Corpus depressum. Caput subdiscretum. Apertura proboscidis terminalis cruciata. Ocelli in acervos duos lineares, antice convergentes; posteriores usque majores. Maricolæ.
In honorem cl. Tatsnoskii, viri Japonensis eruditi et nobilis.

31. **Tatsnoskia depressa.** Corpus depressum, in contractione latum, supra cinnabarinum, lateribus obscurioribus. Caput parvum, obtusum, fronte emarginata; apertura proboscidis parva cruciata. Ocelli fusci, minus conspicui, sex in utroque acervo. Long. 1·2; lat. 0·15 poll.
*Hab.* In portu "Hakodadi" insulæ "Jesso;" in fundo arenoso, e 6-10 org. profundo accepta.

### COSMOCEPHALA, nov. gen.

Corpus depressum, longitudine mediocre, minus contractile. Caput continuum v. subdiscretum, maculis angularibus v. fasciis sepius ornatum. Apertura proboscidis in margine frontale inferiore sita. Proboscis lævis. Cervix utrinque pseudorimis inconspicuis (lineis impressis incoloratis) instructus. Ocelli minus conspicui, utplurimum in margine capitis antero-laterali dispositi. Species maricolæ, maxima ex parte boreales.

32. **Cosmocephala Beringiana.** Corpus sat elongatum, depressiusculum, supra cervinum, subtus pallide aurantiacum. Caput vix subdiscretum, breve, quam corpus angustius, antice rotundatum et emarginatum, cervinum, maculis angularibus albis in fronte et lateribus; fascia transversa angusta alba, retrorsum convexa, in cervice. Ocelli numerosi, utrinque in acervos duos dense aggregati. Caput infra pseudorima longitudinali mediana; pseudorimæ cervicales inferiores, una transversa utrinque sita, quæ in medio vix confluentes. Long. 3; lat. 0·2 poll.
*Hab.* In freto Beringiano; e fundo subuloso profunditatis 5 org.

33. **Cosmocephala Japonica.** Corpus subelongatum, utrinque obtusum; lateribus in extentione fere parallelis. Color supra brunnea, subtus alba; caput linea mediana et maculis minutis irregularibus incoloratis; fronte, et maculis cervicalibus triangularibus, albis. Caput breve subdiscretum, fronte rotundata, ad aperturam profunde fissa. Cervix utrinque pseudorima obliqua, antrorsum curvata. Ocelli sat magni, in capitis marginibus antero-lateralibus, utrinque 10-15. Long. 4; lat. 0·18 poll.
*Hab.* In portu "Simoda;" littoralis in rupium fissuris et sub lapidibus.

---

## Descriptions of two new genera of Shells.

BY T. A. CONRAD.

### GONIDEA.

Shell angular, elongated; hinge furnished with a short, obtuse cardinal tooth, fitting into a corresponding depression in the cardinal plate; tooth obsolete in the left valve; anterior muscular impressions not confluent, lower accessory impressions opposite the middle of the large impression.

1. **Anodon Randalii**, Trask. Proceed. Califor. Acad. Nat. Sc. vol. i. p. 28.

2. **A. feminalis**, Gould. The anterior muscular impressions have a relative position more nearly resembling that of *Triquetra* than *Unio* or *Anodon*. The

genus is founded on a shell which inhabits Sacramento River, California. Perhaps *Anodonta angulata*, Lea, may be included in this genus.

### CALYPTRAPHORUS.

Shell subfusiform; spire acutely rostrated; beak straight, very slender; labrum with a sinus at summit and base, elsewhere entire; a calcareous deposit covers the entire shell within and without.

Allied to *Rostellaria*, Lam.

1. Calyptraphorus velatus. (Rostellaria) Con. Tert. Fossils, p. 38, pl. 15, fig. 4.

2. C. trinodiferus. *n. s.* Subfusiform, with three distant nodes on the upper part of the body volution; spire subtriangular, having curved longitudinal ribs visible beneath the tunic; rostrum of the spire elongated and curved; labrum with a prominent angle above.

From the Eocene of Alabama. Mr. Showalter.

This genus at present is known only in Eocene deposits.

---

## Rectification of some of the generic names of American Tertiary Fossils.

BY T. A. CONRAD.

### RIMELLA, Agaz.

R. laqueata, Con. (Rostellaria.)

### ANAULAX, Roissy.

A. staminea, Con. (Olivula.)

### AXINÆA, Poli.

A filosa, Con. Inadvertently referred to Glossus in the Proceedings and in Wailes' Geology of Miss.

### DIPLODONTA, Phillipi.

D. acclinis, Con., elevata, Con., in the Miocene; *ungulina, Nitens inflata* in the Eocene. (Mysia, Loripes, Lucina, inadvertently Cyclas.)

### JANIRA, Schum.

J. Humphreysii, Con., J. Poulsoni. (Pecten.) Referred also to Neithea, but in my opinion that genus should be restricted to the Cretaceous forms of which *N. quinquecostata* is the type.

### BUSYCON, Botton.

In the Proceed. 1854, p. 30, the above is printed Busyeon, a typographical error copied from Gray's Synopsis.

---

## Description of a new species of MYACITES.

BY T. A. CONRAD.

### MYACITES, Schlottheim.

M. Pennsylvanicus. Ovato-trigonal; ventricose; beaks submedial, anterior sides shortest, subcuneiform, extremity obliquely truncated above? posterior margin obtusely rounded, subangulated at junction with basal margin which is not greatly curved; beak not prominent; surface marked with very fine unequal closely-arranged concentric lines; substance of shell pearlaceous and iridescent. Length ½ inch.

*Locality.* Phœnixville, Pennsylvania.

Occurs in the Black shale with two species of *Posidonia.*

## Description of a new genus of the family DREISSENIDÆ.

BY T. A. CONRAD.

### MYTILOPSIS.

Shell mytiliform, attached by a byssus; hinge with a septum, beneath which on the cardinal side is a triangular cup-shaped process; cartilage groove rather deep.

MYTILUS LEUCOPHÆATUS, Con. Journ. Acad. Nat. Sciences, vol. vi. p. 263, pl. 11, fig. 13.

This singular bivalve inhabits the rivers of Virginia and probably further south, where the water is brackish, resembling *Cyrena* in that respect, and it is found in great abundance attached by its byssus to *Ostrea Virginiana.* The hinge resembles that of *Septifer* and *Dreissena*, with the addition of a singular cap-shaped, thin, white appendage, which projects obliquely towards the cavity of the valves. Another species inhabiting St. Domingo has been figured and described by Recluz as *Dreissena Domingensis.*

## Notices of some Remains of Extinct Fishes.

BY JOSEPH LEIDY, M. D.

1. HADROPUS PRISCUS, Leidy.

The genus and species are founded upon the fragment of a bone with two teeth, apparently of a Pycnodont fish allied to Placodus, obtained by Dr. William Spillman, from a cretaceous deposit in the neighborhood of Columbus, Mississippi.

The fragment of bone is about 1½ inches in depth and breadth, and about ¾ of an inch in thickness; is convex on the outer side; and presents large reserve cavities on the inner side at the base of the two teeth which are coossified with one of the borders of the bone. The teeth present a remarkable resemblance to premolars of a pachydermatous mammal. They are quadrate, and are about as broad as they are high, and about half the thickness. They are bilobed at the triturating surface, which slopes inwardly; and are invested with smooth enamel, which extends twice the depth externally that it does internally. The two teeth differ a little in form and size. Their height externally is 8 lines; the breadth of one 8 lines; of the other 7 lines; and the thickness of both is 4 lines, except the distal lobe of the larger tooth which is 5 lines.

2. PHASGANODUS DIRUS, Leidy.

This genus and species are founded upon a much mutilated dental bone with teeth imbedded in a hard mass of sandstone, discovered in Nebraska, by Dr. F. V. Hayden. The specimen I suspect to have been obtained from a cretaceous deposit.

The dental bone in its perfect condition has been about 6 inches in length, and 2 inches in depth posteriorly. To the dentary border, so far as can be ascertained, there have been six large, coossified, sabre-shaped teeth. The trenchant border is directed outwardly; and the obtuse, inner, concave border is longitudinally ridged. The first tooth visible is about ¾ of an inch from the end of the jaw, and has been about 1½ inches long. The second tooth was situated about 1 inch posterior to the first, and was about ¾ of an inch long. The third tooth, the best preserved in the specimen, about ½ an inch behind the second, has a strong conical base, and it is 10 lines long. The succeeding teeth decrease in size, and are at irregular distances apart. The specimen I suspect to belong to a scomberoid fish allied to Enchodus.

3. TURSEODUS ACUTUS, Leidy.

This genus and species are founded upon a left dental bone with teeth, probably of a ganoid fish, which I obtained from the black shale, of what have been usually considered the triassic rocks, from near Phœnixville, Chester Co., Pa.

The dental bone is 20 lines long, by 4 lines in depth posteriorly. It is straight, and its outer surface is covered with fine, interrupted ridges, such as are observed upon small ganoid scales, found in the same series of rocks at Gwynned, on the North Pennsylvania Railroad.

Upon the dental border of the specimen there may be counted the remains of 20 teeth, situated at irregular distances apart. They have measured from ½ to 1 line long. They are columnar in form, slightly curving inward; have a spreading base; and an abrupt, conical, enamel summit. The fish may be allied to *Belonostomus* or *Eugnathus*, but I am unable to ascertain the exact form of the teeth in these genera.

4. PYCNODUS ROBUSTUS, Leidy.

The species is founded upon a single large tooth obtained by Prof. G. H. Cook, from the green sand of New Jersey.

The specimen is 14½ lines long and 3¾ wide.

## Examination of **ENARGITE** from New Grenada.

### BY WM. J. TAYLOR.

I received from Jos. A. Clay, Esq., a fellow member of the Academy, a mineral which proves on examination to be Enargite. Mr. Clay received this in a box of minerals from South America; it was labelled "an antimonial silver ore from the mines of Santa Anna, New Grenada;" there were several other minerals accompanying it from the same locality.

Enargite was, I believe, first found in the Cordilleras of Peru, and mineralogists were surprised a few weeks since by Dr. Genth's determining a small specimen of a mineral found by the State Geologist of South Carolina, Oscar M. Leiber, Esq., from the "Brewers' Mine," to be of the same species. ("Contributions to Mineralogy," by Dr. F. A. Genth, American Journ. Sci. and Arts, May, 1857, p. 420.) The fact of its occurring at another locality will not be without interest.

The structure of the massive portion of the mineral is columnar, and it is intermixed with a quartose rock and pyrites, in which small cavities occur, filled with the crystalled Enargite, some of which are very distinct. The Enargite is very brittle, its color a greyish black with streaks of the same color; the powdered mineral is very crystalline with a metallic lustre. Before the blowpipe it decrepitates; on charcoal, gives the odor of arsenic and a very slight incrustation of antimony; with carbonate of soda, gives hepar and metallic copper.

The analysis I made in the laboratory of Dr. F. A. Genth, from a small portion of the perfectly pure massive mineral, of which 0·7082 grammes were treated with aqua regia and gave the following results:

| | *Per cent.* |
|---|---|
| Sulphur | 34.50 |
| Copper | 46.62 |
| Arsenic | 16.31* |
| Antimony | 1.29 |
| Iron | 0.27 |
| | 98.99 |

The atomic proportion is:

| | |
|---|---|
| Sulphur | 2.16 |
| Copper | 1.47 |
| Arsenic<br>Antimony | 0.23 |

---

*There was a slight loss of the arsenic.

From which is obtained the formula of $6CuS, As S_3$

| | Equivalents. | Atomic weight. | Calculated percentage. |
|---|---|---|---|
| Copper | 6 | 189.6 | 46.40 |
| Sulphur | 9 | 144.0 | 35.24 |
| Arsenic | 1 | 75.0 | 18.36 |

From the above formula it seems not improbable that Enargite and Stephanite are isomorphus.

## Descriptions of Twenty-Seven New Species of UNIONES from Georgia.

BY ISAAC LEA.

Unio subgibbosus. Testâ lævi, ellipticâ, compressâ, valdè inæquilaterali, posticè subangulatâ; valvulis crassis, planulatis; natibus vix prominentibus; epidermide tenebroso-olivaceâ, striatâ, obsoletè radiatâ; dentibus cardinalibus parvis, brevis crassisque; lateralibus longis, crassis curvisque; margaritâ vel albâ vel salmonis colore tinctâ.
*Hab.* Oostenaula River, Floyd County, and Etowah River, Georgia. Rev. G. White.

Unio Savannahensis. Testâ lævi, oblongâ, inflatâ, ad latere planulatâ, posticè obtusè angulatâ, inæquilaterali; valvulis subcrassis, anticè crassioribus; natibus prominulis; epidermide rufo-fuscâ vel tenebroso-fuscâ, obsoletè radiatâ; dentibus cardinalibus subgrandibus, pyramidatis, in utroque valvulo duplicibus; lateralibus prælongis, lamellatis curvisque; margaritâ vel albâ vel pallidâ purpureâ vel salmonis colore tinctâ et iridescente.
*Hab.* Savannah River, also Brantley's Mill, Washington County, Georgia. Rev. G. White, Sugar Creek, Mecklenburg County, N. C. C. M. Wheatley.

Unio virens. Testâ lævi, oblongâ, subinflatâ, posticè obtusè angulatâ valdè inæquilaterali; valvulis subtenuibus, anticè crassioribus; natibus parvis prominulis; epidermide virido-olivâ, striatâ, vittatâ, eradiatâ; dentibus cardinalibus parvis, erectis, subcompressis crenulatisque; lateralibus prælongis, lamellatis rectisque; margaritâ cœruleo-albâ et iridescente.
*Hab.* Georgia. Rev. G. White.

Unio sublatus. Testâ lævi, transversâ, ad latere compressâ, posticè angulatâ, valdè inæquilaterali; valvulis subcrassis; natibus prominulis, ad apices undulatis; epidermide tenebroso-fuscâ, valdè radiatâ; dentibus cardinalibus parvis, subpyramidatis, crenulatis, in utroque valvulo duplicibus; lateralibus longis, lamellatis subrectisque; margaritâ purpureâ et iridescente.
*Hab.* Uchee Bar, below Columbus, Georgia. Bishop Elliott.

Unio obnubilus. Testâ lævi, ellipticâ, compressâ, posticè biangulatâ, inæquilaterali; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fuscâ, eradiatâ, subnitens; dentibus cardinalibus subgrandibus, subpyramidatis, crenulatis, in utroque valvulo duplicibus; lateralibus longis, lamellatis curvisque; margaritâ purpureâ et iridescente.
*Hab.* Buckhead Creek, Burke County, Georgia. Bishop Elliott.

Unio opacus. Testâ lævi, ellipticâ, subcompressâ, posticè biangulatâ, inæquilaterali; valvulis subcrassis; natibus prominulis; epidermide vel tenebroso-fuscâ vel nigricante, subnitens; dentibus cardinalibus subgrandibus, elevatis, subpyramidatis crenulatisque; lateralibus longis, lamellatis subrectisque; margaritâ purpureâ et iridescente.
*Hab.* Buckhead Creek, Burke County, Georgia. Bishop Elliott.

Unio similis. Testâ lævi, ellipticâ, subinflatâ, posticè subbiangulatâ, valdè inæquilaterali; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fuscâ, radiatâ, politâ; dentibus cardinalibus subgrandibus, subelevatis, et subpyramidatis; lateralibus sublongis subcurvisque; margaritâ vel purpureâ vel salmonis colore tinctâ et iridescente.

*Hab.* Buckhead Creek, Burke County, Georgia. Bishop Elliott.

Unio æquatus. Testâ lævi, ellipticâ, compressâ, posticè biangulatâ et planulatâ, valdè inæquilaterali; valvulis subcrassis; natibus prominulis; epidermide tenebroso-castaneâ, radiatâ, ad umbones politâ; dentibus cardinalibus subgrandibus, paulisper elevatis crenulatisque; lateralibus sublongis, lamellatis subrectisque; margaritâ vel albâ vel salmonis colore tinctâ et iridescente.

*Hab.* Buckhead Creek, Burke County, Georgia. Bishop Elliott.

Unio naviculoides. Testâ lævi, transversâ, subinflatâ, posticè biangulatâ, valdè inæquilaterali; valvulis subtenuibus; natibus prominulis; epidermide tenebroso-fuscâ, striatâ; dentibus cardinalibus parviusculis, compressis, trigonis, in utroque valvulo duplicibus crenulatisque; lateralibus prælongis, lamellatis subrectisque; margaritâ purpureâ et iridescente.

*Hab.* Buckhead Creek, Burke County, Georgia. Bishop Elliott. Macon. I. C. Plant.

Unio viridicatus. Testâ lævi, suboblongâ, subcompressâ, posticè compressâ, biangulatâ, valdè inæquilaterali; valvulis subtenuibus; natibus prominulis, ad apices rugoso-undulatis; epidermide virescente, politâ, eradiatâ; dentibus cardinalibus parvis, subcompressis crenulatisque; lateralibus prælongis, lamellatis subrectisque; margaritâ cœruleo-albâ et iridescente.

*Hab.* Buckhead Creek, Burke County, Georgia. Bishop Elliott.

Unio subflavus. Testâ lævi, ellipticâ, compressâ, posticè subbiangulatâ, inæquilaterali; valvulis crassis; natibus prominulis; epidermide vel luteolâ vel luteo-castaneâ vel obsoletè radiatâ vel eradiatâ; dentibus cardinalibus parvis, subconicis, crenulatis, in utroque valvulo duplicibus; lateralibus longis, lamellatis subcurvisque; margaritâ vel salmonis colore tinctâ vel albidâ et iridescente.

*Hab.* Walnut Creek, above Macon, Georgia. Bishop Elliott and I. C. Plant.

Unio sudus. Testâ lævi, ellipticâ, subinflatâ, posticè obtusè angulatâ, inæquilaterali; valvulis subtenuibus, anticè crassioribus; natibus subprominentibus, ad apices undulatis; epidermide luteolâ, valdè radiatâ; dentibus cardinalibus parvis, compressis, lamellatis, in utroque valvulo duplicibus; lateralibus sublongis, lamellatis subrectisque; margaritâ vel albâ vel salmonis colore tinctâ et valdè iridescente.

*Hab.* Dry Creek, near Columbus, Georgia. Bishop Elliott. Macon. I. C. Plant.

Unio tetricus. Testâ lævi, ellipticâ, valdè compressâ, posticè biangulatâ, inæquilaterali; valvulis crassiusculis; natibus prominulis; epidermide rugoso-striatâ, tenebroso-fuscatâ, obsoletè radiatâ; dentibus cardinalibus parvis, conicis, in utroque valvulo subduplicibus; lamellatis sublongis subcurvisque; margaritâ purpurascens et iridescente.

*Hab.* Flint River, near Albany, Georgia. Bishop Elliott.

Unio Woodwardius. Testâ lævi, triangulari, tumidâ, posticè angulatâ, ad latere planiusculâ, inæquilaterali; valvulis crassis, anticè crassioribus; natibus elevatis; epidermide luteo-olivâ, striatâ, radiis maculatis; dentibus cardinalibus parviusculis crassisque; lateralibus percrassis, crenulatis rectisque; margaritâ argenteâ et iridescente.

*Hab.* Etowah and Connasauga Rivers, Cass County, Georgia. Bishop Elliott and Rev. G. White.

UNIO TENEBRICUS. Testâ lævi, ellipticâ, subinflatâ, posticè obtusè angulatâ, inæquilaterali; valvulis tenuibus, anticè crassioribus; natibus prominulis; epidermide tenebroso-fuscâ, obsolete radiatâ; dentibus cardinalibus parvis, valdè crenulatis, in utroque valvulo duplicibus; lateralibus lamellatis curvisque; margaritâ vel purpureâ vel salmonis colore tinctâ et iridescente.
*Hab.* Etowah River, Georgia. Bishop Elliott and Rev. G. White.

UNIO RUFUS. Testâ lævi, transversâ, valdè compressâ, ad latere planulatâ, posticè obtusè angulatâ, valdè inæquilaterali; valvulis subcrassis; natibus prominulis, accuminatis; epidermide rufo-fuscâ, eradiatâ; dentibus cardinalibus parvis, obtuso-conicis crenulatisque; lateralibus sublongis, subcrassis curvisque; margaritâ cœruleo-albâ et iridescente.
*Hab.* Etowah River, Cass County, Georgia. Bishop Elliott.

UNIO MODICUS. Testâ lævi, obliquâ, subinflatâ, postice subbiangulatâ, valdè inæquilaterali; valvulis crassis, anticè crassioribus; natibus subprominentibus, ad apices rugoso-undulatis; epidermide tenebroso-fuscâ, eradiatâ; dentibus cardinalibus subgrandibus crenulatisque; lateralibus curtis, crassis subcurvisque; margaritâ vel albâ vel pallido-salmoniâ et iridescente.
*Hab.* Chattahoochee River, near Columbus, Georgia. Bishop Elliott.

UNIO DENIGRATUS. Testâ lævi, ellipticâ, subinflatâ, ad latere planulatâ, inæquilaterali; valvulis subtenuibus, anticè crassioribus; natibus prominulis; epidermide nigricante, eradiatâ et micante; dentibus cardinalibus parvis, pyramidatis crenulatisque; lateralibus sublongis, lamellatis subcurvisque; margaritâ vel purpureâ vel salmonis colore tinctâ et iridescente.
*Hab.* Streams near Columbus, Georgia. Bishop Elliott.

UNIO FUMATUS. Testâ lævi, ellipticâ, compressâ, posticè biangulatâ, inæquilaterali; valvulis subtenuibus; natibus subprominentibus; epidermide tenebroso-fuliginosâ et eradiatâ; dentibus cardinalibus parviusculis crenulatisque; lateralibus sublongis, subcrassis subrectisque; margaritâ purpurescente et valdè iridescente.
*Hab.* Chattahoochee River, near Columbus, Georgia. Bishop Elliott. Hospaliga Creek, Alabama. Dr. Neisler.

UNIO PURPURELLUS. Testâ lævi, oblongâ, subinflatâ, ad latere planulatâ, posticè biangulatâ, valdè inæquilaterali; valvulis crassiusculis; natibus prominulis; epidermide tenebroso-fuscâ et posticè obsoletè eradiatâ; dentibus cardinalibus parviusculis, crenulatis, in utroque valvulo subduplicibus; lateralibus prælongis, lamellatis subcurvisque; margaritâ purpureâ et valdè iridescente.
*Hab.* Flint River, near Albany, Georgia. Bishop Elliott.

UNIO PENICILLATUS. Testâ posticè plicatâ, ellipticâ, subinflatâ, posticè subbiangulatâ, inæquilaterali; valvulis crassiusculis, anticè crassioribus; natibus subprominentibus; epidermide luteolâ, radiis penicillatis indutis, politâ; dentibus cardinalibus crassiusculis, crenulatis, subpyramidatis; lateralibus sublongis, subcrassis subrectisque; margaritâ vel albâ vel roseâ vel salmonis colore tinctâ et valdè iridescente.
*Hab.* Chattahoochee, near Columbus, Georgia. Dr. Boykin. Near Atlanta. Bishop Elliott. Flint River, near Albany, Georgia. Bishop Elliott and Rev. G. White.

UNIO PLANTII. Testâ lævi, regulariter ellipticâ, valdè compressâ, inæquilaterali; valvulis subcrassis, anticè crassioribus; natibus prominulis; epidermide tenebroso-castaneâ, eradiatâ; dentibus cardinalibus parviusculis, subdepressis, obtuso-conicis crenulatisque; lateralibus prælongis, subcrassis curvisque; margaritâ salmonis colore tinctâ et valdè iridescente.
*Hab.* Flint River, near Macon, Georgia. I. C. Plant.

Unio subniger. Testâ lævi, ellipticâ, subcompressâ, inæquilaterali, posticè obtusè angulatâ; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fuscâ, nigricante, striatâ, eradiatâ; dentibus cardinalibus parviusculis, erectis, conicis crenulatisque; lateralibus prælongis, lamellatis curvisque; margaritâ albâ et iridescente.

*Hab.* Flint River, near Macon, Georgia. I. C. Plant.

Unio bulbosus. Testâ lævi, obliquâ, valdè inflatâ, valdè inæquilaterali, posticè obtusè angulatâ; valvulis crassis, anticè crassioribus, natibus ——— ; epidermide nigricante, micante, eradiatâ; dentibus cardinalibus subgrandibus, subpyramidatis crenulatisque; lateralibus curtis, subcrassis subrectisque; margaritâ vel albâ vel salmonis colore tinctâ et iridescente.

*Hab.* Flint River, near Macon, Georgia. I. C. Plant and H. M. Neisler, M.D.

Unio Maconensis. Testâ lævi, valdè transversâ, subcompressâ, ad latere planulatâ, valdè inæquilaterali, posticè subbiangulatâ; valvulis subtenuibus; natibus prominulis; epidermide nigricante, obsoletè radiatâ; dentibus cardinalibus parviusculis, compressis, acuminatis, crenulatis, in utroque valvulo duplicibus; lateralibus prælongis, lamellatis rectisque; margaritâ purpurascente et iridescente.

*Hab.* Flint River, near Macon, Georgia. I. C. Plant.

Unio obfuscus. Testâ lævi, regulariter ellipticâ, inflatâ, posticè rotundatâ, inæquilaterali; valvulis subtenuibus; natibus subprominentibus; epidermide tenebroso-fuscâ, nigricante, obsoletè radiatâ, subpolitâ; dentibus cardinalibus subcompressis, crenulatis, in utroque valvulo duplicibus; lateralibus lamellatis, sublongis subcurvisque; margaritâ paulisper salmonis et valdè iridescente.

*Hab.* Flint River, near Macon, Georgia. I. C. Plant.

Unio aquilus. Testâ lævi, transversâ, subcompressâ, posticè angulatâ, valdè inæquilaterali; valvulis crassiusculis; natibus prominulis, ad apices rugoso-undulatâ; epidermide tenebroso-fuscâ, nigricante, obsoletè radiatâ, transversè striatâ; dentibus cardinalibus parviusculis, subelevatis crenulatisque: lateralibus prælongis, lamellatis subrectisque; margaritâ vel purpureâ vel albâ et valdè iridescente.

*Hab.* Flint River, near Macon, Georgia. I. C. Plant.